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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

MENON, KRISHNAN S

ART UNIT

PAPER NUMBER

1723

DATE MAILED: 02/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

### Office Action Summary

Application No.

09/819,574

Applicant(s)

BLASE ET AL.

Examiner

Krishnan S Menon

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) <sup>10-21</sup>~~1-21~~ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) <sup>10-21</sup>~~1-21~~ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 27 November 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

Claims 10-21 are pending in this application.

#### *Drawings*

The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on 11/27/02 have been approved. A proper drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The correction to the drawings will not be held in abeyance.

#### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 13-20 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Garcera (US 4,849,104).

Garcera (104) discloses a membrane module for filtering a medium to at least yield a permeate (col 5 line 42-col 6 line 43, fig 6A – 14B). Garcera (104) discloses plurality of ceramic filter elements arranged in parallel (fig 1), clamped by covers that are perpendicular to the elements (fig 10) with seals between the cover and the elements (101-fig 10). The seals are made by forming a blank seal with inner opening slightly smaller than the rod end, holding the seal on the rod ends, processing the outer dimension to obtain a finished seal, and then assembling the seal with the rod ends to form the finished membrane module as in instant claim 13. Granted that Garcera (104) teaches forming the seals by mounting the blanks on the rod ends of the filter elements while instant

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claim 13 teaches mounting the blank seal on a holder, the finished product (membrane module) in both cases will be structurally indistinguishable from each other. Claim 13 and claims depending from it are product-by-process claims. "[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). The element in Garcera (104) could be of the same size along its length (instant claim 14), or may have smaller dimension at the ends (fig 5a) (instant claim 19) or may have reinforcing enamel coating (col 2 lines 19-27) (instant claim 15), module having permeate outlet connection (instant claim 16) (fig 1), the cover plate having outer and inner plates with radial expansion space in between for free expansion of the seal (claim 17) (fig 6A), and collar for the seal in the free space (instant claim 18, 20) (53-fig 6C).

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1. Claims 10-12 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garcera et al (US 5,602,910) in view of Garcera (104).

Garcera (910) teaches a process for the production of a membrane module for filtering a medium, the membrane module having a ceramic filter element (20-fig 5) with rod ends clamped by covers (15, 18-fig 5) that are perpendicular to the filter elements, and having seals between the rod ends and the covers (see fig 8). The process comprises attaching the seal to a rod end and assembling to finish the membrane module (see fig 5-10 and examples).

Garcera (910) does not teach forming the seal by processing a blank seal after mounting on a holder of average dimensions as that of a plurality of filter elements. Garcera (104) teaches processing a blank seal after mounting on the filter element itself to form the blank seal (see col 5 line 42-col 6 line 28, fig 6A-9). It would be obvious to one of ordinary skill in the art at the time of invention to use the teachings of Garcera (104) to form the seals for the assembly of the module in Garcera (910) because such seals would provide tight seals with low compression and prevent the filter elements from damaging due to the need for excessive sealing compression (Garcera 104: col 2 lines 39-42). One would also use a filter element of Garcera (910) as a holder for forming multiple seals because filter elements of Garcera (910) have rod ends of uniformly finished dimensions (col 2 lines 17-35) compared to the filter elements of Garcera (104) (col 2 lines 28-35), which are non-uniform.

Regarding claim 12, the additional limitation of having a reinforced surface is taught by Garcera (104) (col 2 line 65-col 3 line 5).

Regarding claim 11, Garcera (910) does not specifically teach the rod end being of smaller dimension than that of the main region of the filter element. However, it would be obvious to one of ordinary skill in the art at the time of invention that a rod end of the filter element could be machined to a smaller dimension than the main body of the filter element in the teachings of Garcera (910) when finishing the end as in fig 12.

Regarding claim 21, Garcera (910) teaches a method of producing a membrane module comprising ceramic filter elements, wherein the processed seals are attached to the end of the ceramic filter elements (fig 5-10, examples). Garcera (910) does not teach forming the seal by processing a blank seal after mounting on a holder of average dimensions as that of a plurality of filter elements. Garcera (104) teaches processing a blank seal after mounting on the filter element itself to form the blank seal (see col 5 line 42-col 6 line 28, fig 6A-9). It would be obvious to one of ordinary skill in the art at the time of invention to use the teachings of Garcera (104) to form the seals for the assembly of the module in Garcera (910) because such seals would provide tight seals with low compression and prevent the filter elements from damaging due to the need for excessive sealing compression (Garcera 104: col 2 lines 39-42). One would also use a filter element of Garcera (910) as a holder for forming multiple seals because filter elements of Garcera (910) have rod ends of uniformly finished dimensions (col 2 lines 17-35) compared to the filter elements of Garcera (104) (col 2 lines 28-35), which are non-uniform.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S Menon whose telephone number is 703-305-5999. The examiner can normally be reached on 8:00-4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L Walker can be reached on 703-308-0457. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Krishnan S. Menon  
Patent Examiner  
February 6, 2003

*Walker*  
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